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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,994	08/21/2001	Thomas Gray	481340010036	7624

7590 06/13/2005

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EXAMINER	
WU, QING YUAN	

ART UNIT	PAPER NUMBER
2194	

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/933,994	GRAY ET AL.	
	Examiner	Art Unit	
	Qing-Yuan Wu	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 2/28/05.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-7 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-7 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 21 August 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/28/05.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-7 are pending in the application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The following claim language is indefinite:

i. As per claim 1, it is uncertain what "proportional" means (i.e. what criteria or standard is "proportional" based on?).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ferguson et al (hereafter Ferguson) (U.S. Patent 5,504,894), in view of Erickson et al (hereafter Erickson) (U.S. Patent 6,067,457).

6. Ferguson was cited by applicant in Information Disclosure Statement filed June 18, 2004.

7. As to claim 1, Ferguson teaches the invention substantially as claimed including a method of sharing at least one resource amongst a plurality of applications issuing requests in different request classes [col. 2, lines 62-67], comprising the steps of:

i) dynamically assigning a priority to each of a plurality of request queues associated with respective ones of said request classes [col. 2, lines 43-45];

ii) receiving and queuing said requests from said applications in said plurality of queues in accordance with said respective request classes [col.3, lines 1-5; col. 9, lines 20-25; Fig. 2];

iii) allocating said at least one resource to one of said applications whose request has highest priority in a highest priority one of said plurality of request queues [abstract, lines 14-17; col. 8, lines 3-6, 12-15], and in response to said one of said applications relinquishing said resource [col. 7, line 67]; then

iv) repeating steps i) to iii) [col. 5, lines 38-39; col. 7, lines 66-67] .

8. Ferguson does not specifically teach that the assigning of a priority in accordance with a moving average resource allocation, and allocating resource to a request that has been queued longest. However, Ferguson disclosed dynamically adjusting scheduling priorities in accordance with the response time dissatisfaction performance index [col. 2, lines 45-47; col. 5, lines 57-67]

and determining a highest priority queued transaction using a round-robin scan [col. 8, lines 15-16].

9. It would have been obvious to one of an ordinary skill in the art at the time the invention was made, to have recognized that Ferguson's performance index of a class is an average of response time which determines the priority of a class and is directly affected by the resource usage of that class in its corresponding Back-End Processors (hereafter BEP) [col. 6, lines 20-35; col. 8, lines 20-21]. In other word, priority of a class is dynamically adjusted due to the change in resource usage (i.e. moving average resource allocation). In addition, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have replace Ferguson's used of a non-priority sorted queue that uses a round-robin scan to determined a highest priority queued transaction with a first-come first-served (hereafter FCFS) queue to satisfy a predetermined scheduling criteria.

10. Furthermore, Ferguson does not specifically teach inversely proportional. However, Erickson teaches dynamically adjusting (i.e. increasing/decreasing) the priority of a call to manage currently allocated resource [Erickson, abstract; col. 6, lines 40-58].

11. It would have been obvious to one of an ordinary skill in the art at the time the invention was made, to have combined the teaching of Ferguson with the teaching of Erickson because both Ferguson and Erickson teaches dynamically assigning priorities [col. 2, lines 43-5; Erickson, abstract].

12. As to claim 2, Ferguson as modified does not specifically teach wherein said step of dynamically assigning said priority to each of said plurality of request queues implemented as follows:

$p_i = 1.0$ if $min_i < u_i <= max_i$

$p_i = 1.0 - (u_i - min_i / max_i - min_i)$ if $min_i < u_i <= max_i$

$p_i = 0.0$ if $u_i >= max_i$

where p_i is the priority assigned to the i^{th} one of said queues associate with the i^{th} one of said request classes, and u_i is the moving average allocated to said i^{th} one of said request classes. However, Ferguson disclosed a policy that makes all performance indices equal, and as small as possible. It will attempt to prevent one class from achieving response times far below its goal (adjust to a higher priority if is below a minimum) if this degrades another class exceeding its goal (lower the priorities of higher performing queues) [col. 6, lines 36-45].

13. It would have been obvious to one of an ordinary skill in the art at the time the invention was made, to set a threshold point not specifically taught by Ferguson to insure that resources gets allocated in a equally balance manner by adjusting the priorities of the classes.

14. As to claim 3, this claim is rejected for the same reason as claim 1 above.

15. As to claim 4, Ferguson as modified teaches the invention substantially as claimed including wherein the priority assigned to each of said plurality of request queues in accordance with said moving average resource allocation conforms to a predetermined shape of priority function [col. 3, lines 37-46].

16. As to claims 5-7, Ferguson as modified does not specifically teach wherein said shape of said priority function is linear, exponential or step function with respect to said moving average resource allocation. However, Ferguson disclosed updating class priorities based on goal satisfaction [col. 7, lines 8-10]. It would have been obvious to one of an ordinary skill in the art at the time the invention was made, to have included the above limitation to further clarify the relationship between priority function and the moving average resource allocation.

Response to Arguments

17. Applicant's arguments filed 2/28/05 have been fully considered but are moot in view of the new ground(s) of rejection.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qing-Yuan Wu whose telephone number is (571) 272-3776. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Qing-Yuan Wu

MENG-AI T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Examiner

Art Unit 2194